UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,376	11/19/2003	Jonathan Zanhong Sun	YOR920030332US1	5483

21254 7590 05/08/2007

MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER	
NGUYEN, THINH T	
ART UNIT	**PAPER NUMBER**
2818	

MAIL DATE	DELIVERY MODE
05/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,376	SUN ET AL.	
	Examiner	Art Unit	
	Thinh T. Nguyen	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27 and 30-36* is/are pending in the application.

4a) Of the above claim(s) *2-7,9-11,13-27 and 30-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,8 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED OFFICE ACTION

1. This is in response to Applicant amendment on March 06th 2007

2. Claims 1-27,30-36 are pending in the Application. Applicant has cancelled claims 28-29 and added new claims 35-36

Election/Restriction

3. Applicant's election **with traverse** of group I drawn to a magnetic memory element and **Species E reads on fig 1F in the communication with the Office on 3/7/2006 is acknowledged.**

Because Applicant did not distinctly and specifically point out the supposed error in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Applicants have the right to file a divisional, continuation or continuation-in-part application covering the subject matter of the non-elected claims.

The traversal is on the ground(s) that see the election paper. This is not found persuasive for the following reasons :

For Species Election .As discussed in the previous action the examiner already point out the different species with different patentable feature illustrated by the different figures and with 8 different species with different technical features it will be burdensome for the Office

The requirement is still deemed proper and is therefore made FINAL and therefore non-elected group II inventions and non-elected species are withdrawn from consideration. Since the Applicant fails to provide all the claims that belong the species E and that read on Fig 1F, the Examiner will try the identify those claims that belong to this species as best as it can be understood by the Examiner.

4. Upon review of all the claims and the species the Examiner identifies Species E (fig 1F) includes claim 12 with claim 1 and 8 as generic claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6. The Examiner noted that claim 1 has some limitation recited in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

7. Claim 1,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daughton et al. (US patent 6,744,086) in view of Chen et al. (US patent 5,917,747).

With regard to claim 1, Daughton discloses (in the abstract, fig 4, fig 12, column 7 line 25-32,column 8 lines 5-10, column 9 line 55-62) a spin-current switched magnetic memory element, comprising: a plurality of magnetic layers, at least one of said plurality of magnetic layers having magnetic anisotropy component and comprising a current-switchable magnetic moment; and at least one barrier layer (fig 4, layer 5 ,column 4 line 25-26) formed adjacent to said plurality of magnetic layers.

Missing in the Daughton disclosure is the magnetic anisotropy of the magnetic layers is perpendicular.

Chen, however disclose a magnetic memory cell wherein the magnetic anisotropy of the magnetic layer is perpendicular.(see Chen reference column 2 line 40-44,column 4 line 40)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate this feature as taught by Chen into the device by Daughton and come up with the invention of claim 1.

The rationale is as the following:

A person skilled in the art at the times the invention was made would have been motivated to improve the device by Daughton by making it to consume less power in both read and writing mode as suggested by Chen in column 2 lines 4-16.

With regard to claim 8, Daughton (in fig 3 fig, 4) discloses a magnetic memory element comprising: first and second leads (fig 3 layer 3 and 9, fig 4 layer 24 and 27); and a pillar formed

between said first and second leads, said pillar including said at least one barrier layer (fig 3 layer 5 ,fig 4 layer 15) and at least one magnetic layer of said plurality of magnetic layers.

The rationale as why claim 8 is obvious over Daughton in view of Chen has been set forth in the rejection of claim 1.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daughton et al. (US patent 6,744,086) in view of Chen et al. (US patent 5,917,747) and in further view of Nakada et al. (US patent 6,341,053).

With regard to claim 1, as set forth in the rejection of claim 1, the device named device of Daughton in view of Chen, disclose all the invention except for a lead or electrode that includes a magnetic layer. Nakada, however, (in fig 1,column 4 line 58-65) discloses a lead (layer 12) that can include a magnetic layer 13.

It would have been obvious to one of ordinary skill in the art the time the invention was made to incorporate a lead layer (layer 12) that can includes a magnetic layer as taught by Nakada into the Daughton in view of Chen device and come up with the invention of claim 12 of the present Application.

The rationale is as the following:

A person skilled in the art at the time the invention was made would have been motivated to reduce the signal to noise ratio of the Daughton in view of Chen device as suggested by Nakada (See Nakada reference column 2 lines 14-15).

9. Applicant argument about the rejection of claim 1,8 and 27 in the previous Office Action has been fully considered but they are not persuasive .Applicant main argument are that the examiner uses hindsight and the prior arts used in the rejection are not related. The examiner respectfully disagrees as the rationale of the advantages as why to combine the references has been set forth in previous paragraphs in this Office Action.

CONCLUSION

10. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790. The examiner can normally be reached on 9:30 am - 6:30 pm Monday to Friday..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Matthew Smith can be reached on 571-272-1907. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval [PAIR] system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thinh T Nguyen TTN

Art Unit 2818

Andy Huynh
Primary Examiner